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10/527,516	05/13/2005	Michel Zamfiroiu	BDM-05-1041	9933

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EXAMINER	
SANDERS, AARON J	

ART UNIT	PAPER NUMBER
2168	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,516	ZAMFIROIU, MICHEL	
	Examiner	Art Unit	
	AARON SANDERS	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-15 and 17-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-15 and 17-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 November 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendment to the claims filed 12 November 2007 has been entered. Claims 13-15 and 17-24 are pending. Claims 13-15, 17-18 and 21-24 are currently amended. Claims 1-12 and 16 are cancelled. No claims are new. This action is FINAL.

Drawings

The amendment to the drawings filed 12 November 2008 has been entered.

Specification

The amendment to the specification filed 3 March 2008 has been entered.

The abstract of the disclosure is objected to because it contains more than 150 words. See 37 C.F.R. 1.72(b). Appropriate correction is required.

Claim Objections

As per claim 13, the limitation "(iv) addition of the concerned recording in an internal historical database" appears to be a process step. It is recited as being part of "at least one digital recording," however. It is not clear which it is, rendering the claim indefinite.

As per claim 15, the limitation "addition of the internal historical database comprises" lacks antecedent basis in the claims because there is no such "addition" step in claim 13. There is an "addition of the concerned recording in an internal historical database," but this appears to be part of a "recording," not a process step. Even if it were a process step, it is not clear that an

"addition of the internal historical database" is equivalent to an "addition of the concerned recording."

As per claim 15, "the base" lacks antecedent basis in the claims.

As per claim 15, the limitation "specifying by cognateness…" is incomprehensible. Punctuation may help, but even so, it is unclear how the clause "passing the number of semantic levels necessary" is related to the first clause.

As per claim 17, the term "main base" lacks antecedent basis in the claims.

As per claim 18, the term "main base" lacks antecedent basis in the claims.

As per claim 20, the term "main base" lacks antecedent basis in the claims.

As per claim 21, the phrase "a dependence links" is incorrect. It appears that it should be, for example, "a dependence link" or "one or more dependence links."

As per claim 22, the limitation "updates carried out on various branches" lacks antecedent basis in the claims.

As per claim 23, the phrase "cases of the development of the structure of the data" lacks antecedent basis in the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 13-15 and 17-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Klein et al., U.S. 6,631,374 (Klein).

13. Klein teaches "*A process for constructing an organized digital database in a traceable form, wherein a computer-readable medium comprises computer-executable instructions for performing the process, the process comprising*," see col. 1, lines 7-10, "a system and method for providing fine-grained temporal database access in a consistent read environment."

Klein teaches "*modifying a main digital database by adding, deleting, or modifying a recording of the main database, comprising*," see col. 2, lines 38-50, "a transaction makes a change to a relative database block (or simply, 'data block')," where the claimed "modifying" is the referenced "transaction."

Klein teaches "*creating at least one digital recording, wherein the at least one digital recording comprises at least*," see Fig. 4 and col. 6, lines 51-67, "FIG. 4 is a data structure diagram showing the structure of a transaction table entry 70 for use in the database 23 of FIG. 2," where the claimed "digital recording" is the referenced "transaction table entry 70."

Klein teaches "*(i) unique digital identifiers of concerned recordings and attributes of the main database*," see Fig. 4 and col. 6, lines 51-67, "The relative database block 71 refers to the database block within the data tables 36 to which the transaction table entry 70 relates," where the claimed "unique digital identifier" is the referenced "relative database block 71" and the claimed "concerned recordings and attributes" are the referenced "database block[s] within the data tables 36."

Klein teaches "*(ii) a unique digital identifier of a state of the main database corresponding to the modification of the main database*," see Fig. 2 and col. 6, lines 17-23, "The consistent read mechanism iterates through the transaction table entries to provide a selective temporal view of row data as of a given… system change number," where the claimed "unique digital identifier" is the referenced "system change number" and the claimed "state… corresponding to the modification" is the referenced "temporal view."

Klein teaches "*(iii) elementary values of attributes assigned via elementary operations without proceeding to store non-modified attributes or recordings*," see Fig. 4 and col. 6, lines 51-67, "The actual data 75 details the actual data values by address and content," where the claimed "elementary values" is the referenced "actual data 75."

Klein teaches "*and (iv) addition of the concerned recording in an internal historical database composed of at least one internal historical table*," see Fig. 2 and col. 6, lines 8-16, "The rollback mechanism 32 journals transactions in a transaction table 34," where the claimed "historical database" is the referenced group of "rollback segments" 35 and the claimed "historical table" is the referenced "transaction table."

Klein teaches "*and reading the main database, wherein reading the main database comprises*," see Fig. 10 and col. 8, lines 30-43, "FIG. 10 is a flow diagram showing a routine for performing a consistent read operation 160."

Klein teaches "*receiving an original request associated with the unique digital identifier of a target state*," see Fig. 10 and col. 8, lines 30-43, "The purpose of this routine is to access the retained data values stored in the transaction table entries 35 (shown in FIG. 2) associated with the system change number for the database 23 as of the requested query time," where the

claimed "original request" is the referenced "access" and the claimed "unique digital identifier of a target state" is the referenced "system change number."

Klein teaches "*transforming the original request to construct a modified request for addressing the internal historical database comprising criteria of the original request and the unique digital identifier of the target state*," see col. 8, lines 9-17, "A temporal access provides a logical view of retrieved data values as a 'snapshot' taken as of the requested access time. Thus, the environment of the snapshot must first be retrieved (block 141) from the transaction table 34 (shown in FIG. 2). The environment includes the transaction identifier xid, relative user block address rdba, and system change number scn as of the requested query time," where the claimed "modified request" is the referenced "temporal access," the claimed "criteria of the original request" is the referenced "relative user block address" and the claimed "target state" is the referenced "system change number."

Klein teaches "*and reconstructing the recording or recordings corresponding to the criteria of the original request and to the target state, wherein reconstructing comprises finding elementary values contained in the recordings of the internal historical database and corresponding to the criteria of the original request to reduce requirements of storage capacity and processing times*," see Fig. 10 and col. 8, lines 30-43, "First, the relative database block is retrieved (block 161) from the persistent storage 22. Next, each interested transaction entry (ITE) 51 (shown in FIG. 3) is iteratively processed (blocks 162-169) to logically reconstruct the database 23 as of the requested query time."

Klein teaches "*wherein the main database comprises at least one table with organized development links between the unique digital identifiers of successive and alternative states of*

the main database," see Fig. 2 and col. 6, lines 8-16, "The rollback mechanism 32 journals transactions in a transaction table 34… The actual data value changes are stored as linked transaction table entries," where the claimed "main database" is the referenced database 23 and the claimed "development links" are the referenced links between "transaction table entries."

14. Klein teaches "*The process according to claim 13, wherein the recordings of the internal historical database also contain references to other recordings of the internal historical database to specify connections of dependence of source-destination type constituting a stream of interferences between data versions*," see col. 3, lines 18-41, "A logical select operation is executed on the database for row data values as of a query time occurring prior to the commit time of at least one committed transaction. The ordered row data values stored in the undo entries are retrieved by referencing the transaction table entries at each address included in the interested transaction entry with the transaction identifier for the at least one committed transaction."

15. Klein teaches "*The process according to claim 13, wherein modifying the main database comprises a logic operation, and addition of the internal historical database comprises: recording the state of the base corresponding to the logic operation, where there are as many recordings as parameters of the logic operation*," see col. 3, lines 18-41, "A system change number is assigned to the database version upon each committed transaction" and col. 2, lines 38-50, "Each interested transaction entry references a transaction table entry storing the changed data values."

Klein teaches "*recording the possible result of the logic operation*," see col. 5, lines 50-64, "Identical query results are guaranteed for any given system version number."

Klein teaches "*and specifying by cognateness regrouping of operations from the elementary level of modification to a level of the transaction, passing the number of semantic levels necessary for the applications*," see col. 8, lines 9-17, "Thus, the environment of the snapshot must first be retrieved (block 141) from the transaction table 34," where the claimed "regrouping" is the referenced "snapshot."

17. Klein teaches "*The process according to claim 13, wherein the table or tables of the development links between the states of the main base contain(s) recordings specifying rules of correspondence between the recordings of the internal historical database and the states of the main database*," see col. 3, lines 18-41, "The ordered row data values stored in the undo entries are retrieved by referencing the transaction table entries at each address included in the interested transaction entry with the transaction identifier for the at least one committed transaction."

18. Klein teaches "*The process according to claim 17, wherein reading comprises determining the state of the main database by referring to the identifiers and to the tables of development links between the states of the main base*," see col. 3, lines 18-41, "The database is transitioned into successive consistent database versions responsive to each committed transaction."

19. Klein teaches "*An architecture for database management that employs the process according to claim 13, wherein an application querying the main database can specify the state of the desired main database*," see Fig. 1 and col. 3, lines 18-41, "A logical select operation is executed on the database for row data values as of a query time occurring prior to the commit time of at least one committed transaction."

20. Klein teaches "*The architecture according to claim 19, wherein the application brings about modifications in the entire state of the main base and gives rise, in the instance of an attempt to modify a previous state, to creation of new alternatives of digital development of the main database, whose data is generated by the same internal historical database*," see col. 3, lines 18-41, "Rollback segments for uncommitted transactions are stored. Each rollback segment stores a transaction identifier and information pertaining to effecting or restoring the database changes, including addresses for a undo entries containing row data values reflecting the database changes."

21. Klein teaches "*The process according to claim 15, wherein a dependence links serve as recovery criteria for said operations already carried out*," see col. 3, lines 18-41, "Rollback segments for uncommitted transactions are stored."

22. Klein teaches "*The process according to claim 15, wherein updates carried out on various branches can be integrated or merged into the framework of a new state inheriting these branches*," see col. 3, lines 18-41, "The database is transitioned into successive consistent database versions responsive to each committed transaction at a journaled commit time."

23. Klein teaches "*The process according to claim 15, wherein cases of the development of the structure of the data of the main database are treated as particular cases of the development of the data of the main database*," see col. 9, lines 5-17, "Similarly, the transaction table entries could also store record, table, or schema changes. As well, the temporal access operations operate on a single table as of a fixed point in time."

24. Klein teaches "*The process according to claim 15, wherein the internal historical database is explored and queried by applications via a native mode of a DBMS to obtain*

information and to navigate along versions and streams of dependence in accordance with the querying language in force required by the DBMS," see Fig. 2 and col. 5, lines 2-5, "the database engine 21 and database 23 form a relational database management system."

Response to Arguments

As per Applicant's argument that Klein does not teach the digital recording of claim 13 comprising elements (i) - (iv), the Examiner respectfully disagrees. Specifically, Klein teaches "creating at least one digital recording, wherein the at least one digital recording comprises at least," see Fig. 4 and col. 6, lines 51-67, "FIG. 4 is a data structure diagram showing the structure of a transaction table entry 70 for use in the database 23 of FIG. 2," where the claimed "digital recording" is the referenced "transaction table entry 70." Klein also teaches "(i) unique digital identifiers of concerned recordings and attributes of the main database," see Fig. 4 and col. 6, lines 51-67, "The relative database block 71 refers to the database block within the data tables 36 to which the transaction table entry 70 relates," where the claimed "unique digital identifier" is the referenced "relative database block 71" and the claimed "concerned recordings and attributes" are the referenced "database block[s] within the data tables 36." Klein also teaches "(ii) a unique digital identifier of a state of the main database corresponding to the modification of the main database," see Fig. 2 and col. 6, lines 17-23, "The consistent read mechanism iterates through the transaction table entries to provide a selective temporal view of row data as of a given… system change number," where the claimed "unique digital identifier" is the referenced "system change number" and the claimed "state… corresponding to the modification" is the referenced "temporal view." Klein also teaches "(iii) elementary values of attributes assigned

via elementary operations without proceeding to store non-modified attributes or recordings," see Fig. 4 and col. 6, lines 51-67, "The actual data 75 details the actual data values by address and content," where the claimed "elementary values" is the referenced "actual data 75." Lastly, Klein teaches "and (iv) addition of the concerned recording in an internal historical database composed of at least one internal historical table," see Fig. 2 and col. 6, lines 8-16, "The rollback mechanism 32 journals transactions in a transaction table 34," where the claimed "historical table" is the referenced "transaction table."

As per Applicant's argument that Klein does not teach "wherein the main database comprises at least one table with organized development links between the unique digital identifiers of successive and alternative states of the main database" as in claim 13, the Examiner respectfully disagrees. Specifically, the Examiner cited Fig. 2 and col. 6, lines 8-16, "The rollback mechanism 32 journals transactions in a transaction table 34… The actual data value changes are stored as linked transaction table entries," where the claimed "main database" is the referenced database 23 and the claimed "development links" are the referenced links between "transaction table entries."

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Sanders whose telephone number is 571-270-1016. The examiner can normally be reached on M-F 9:00a-4:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Vo can be reached on 571-272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tim T. Vo/
Supervisory Patent Examiner, Art Unit 2168

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Examiner, Art Unit 2168
12 June 2008

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